



# Atmospheres Node Report

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# Topics

Topics selected for this presentation are those for which other nodes may have vested interests

- Priorities Restated
- DDWG PDS4 Participation
- Status of Missions Under Development
- Status of Active Missions
- Related Cassini Efforts
  - Cassini User's Guides
  - Cassini Higher-order products
  - Cassini Metadata Retrieval

# Priorities

- Sustain quality reviews and ingest current data
- Actively participate in and encourage optimal development of data pipelines for missions under development and encourage production of higher order products
- Assist ATMOS users
- Scope and prepare for transition to PDS4
- Support development and ingestion of NASA supported data sets from DAPs
- Plan site revisions after implementation of PDS4

# DDWG PDS4 Preparation

- Participated in the DDWG, helping to refine model and data dictionary for Build 2 as well as helping to determine best practices for migration efforts
- Worked with Shannon Rees and Matias Roybal to prepare ATMOS for migration of PDS3 to PDS4 and prepare for ingest of new mission data (LADEE, MAVEN)
- Worked with Sean Hardmann to refine ingestion/registry services with iterated test products from Phoenix bundles (migrated) Table\_Character Products
- Neakrase will be manning the booth at DPS (October) advertising PDS4 to the user community with updated brochures from DDWG
- Neakrase, Rees, Roybal continue to refine the ATMOS Python Migration Code

# Status of Missions Under Development

- JUNO
  - Launched and on Aug 5 opened its solar panels. “Worked like a champ”, Bill Kurth.
  - We have a live mission and can get on with assessing and revising SISs L2 & L3 data products and finalizing the SIS development schedule.
  - Kurth is leading the data planning and archiving development.
- MSL/REMS SIS peer review delayed due to lack of external reviewers.

# Status of Missions Under Development

- LADEE
  - LADEE has setup bimonthly telecons of a data working group.
  - Lynn and Lyle will be giving the instrument teams an XML/Intro to PDS4 primer at the next telecon (8/30)
  - In an effort to speed up use of PDS4, each team has submitted representative examples of a data files
  - Neese is working closely with the ATMOS node to define the needed data structure and is using ATMOS Python Migration Code to help generate PDS4 Prototype XML templates
  - Lynn Neakrase, Shannon Rees and Matias Roybal have begun prototyping XML templates for the data examples

# Status of Missions Under Development

- MAVEN
  - ATMOS is only dealing with the UV instrument.
  - IUVS SIS development is under way.
  - We are waiting for telecons to resume.
- EXOMARS – MATMOS
  - Vicky Hipkin/CSA ( MATMOS Co-PI) has not interacted with us this quarter.
  - Hipkin designated Mickael Germain to represent CSA in IPDA.
  - Beebe has been trying to get a response out of Germain to encourage him to participate in the next IPDA meeting.

# Status of Active Missions

- MRO
  - MRO/MCS deliveries continue to run smoothly.
  - DDR liens should be resolved by end of September.
- MESSENGER
  - MASCS delivery has been received and validated for Sept 8.
- Cassini
  - The July delivery was complete except for CDA. Sascha Kemp moved to Univ. of Colorado, delaying the delivery.
  - CIRS has submitted V3.0 of entire data set. Validation in progress.
  - UVIS is running smoothly with V1.2 online.



# Cassini User's Guide Status

- Cassini funded
- Lead by Mission Scientist, Managers & R. Beebe
- Contain
  - Introduction to instrument
  - Accessing data in PDS
  - Detailed updated calibration information
  - End-to-end example of data reduction with corresponding data files
  - Possible access to team software
- Will be delivered to PDS as a DOC file or specified version.
- Intended use – data access & basis for workshops.

# Cassini User's Guide Status

Instrument	Lead	Lead Author	Current Status
CAPS	Frank Crary	Robert Wilson/LASP	Contract JPL-SwRI-Colo U finally arrived. Wilson is working on outline.
CDA	Sasha Kemp	Amara Graps/SwRi in Boulder	Sasha Kemp has arrived at U of C and Graps and he have defined tasks and Graps is moving forward.
CIRS	Conor Nixon	Monte Kaelberer/Goddard	CIRS is progressing on guide. Beebe has reviewed components. Will do part in FY11
INMS	Mark Perry	Mark Peery/APL	Peery has delivered the "final" draft of the neutral Titan guide and the guide for finding data in the PDS to Beebe, Neutrals ude promised for mid-Sept.
ISS	Bob West	Ben Knowles/Cyclops	Knowles has delivered an extensive outline and Section 2 test - reviewed by Beebe
MAG	Chris Russell	Hanying Wei/UCLA	Chapter 2-4 have gone to Chris Russell and Michele Dougherty for review.
MIMI	Don Mitchell	Jon Vandergrif /APL	<b>April 25:</b> complete first draft of text; good handle on end-to-end examples -- <b>June 1:</b> polished, well integrated draft; polished end-to-end examples -- <b>July 18:</b> final document done; start beta testing -- <b>Submit in August -- not yet seen!</b>
Radar	Steve Wall	Ellen Stofan/Proxemy Research	Completed, Approved by Curt Niebur, and delivered to Imaging Node.
RSS	Sami Asmar	Mick Conally/JPL	Asmar and Conally submitted outline Jan 19. Team is slow in responding.
UVIS	Larry Esposito	Feng Tian/ Univ. of Colo	Team members have generated all chapters. The team is now conducting an internal review before delivering it to Beebe for review.
VIMS	Larry Soderblom	This will be done in conjunction with the PDS Imaging node to use ISIS	This will be done in conjunction with the PDS Imaging node to use ISIS
DISR	Chuck See	Chuck See	See is progressing. The first task was to collect info from retirees.
RPWS	no guide planned	PPI judged the SIS adequate	

# Funded Higher-Order Cassini Products

- Higher-Order products were selected by Cassini management based on
  - Products suggested by PDS nodes when paged by Beebe
  - Suggestions by PIs of Cassini Instruments
  - Readiness for teams to produce products
  - Limitation of available funds

# FY11 Funded Higher-Order Cassini Products

Team	Submitted By	Description of FY11 Higher Order Products
CAPS	Frank Crary	CAPS will provide electron density, electron temperature, ion flow velocity and separate density and temperature values for different ion species (protons, molecular hydrogen and water group).
MIMI	Jon Vandegriff via Don Mitchell	Don Mitchell has changed his priorities and is asking for FY12 funding
RADAR	Steve Wall	Radar will produce a Titan global shape model. Altimetry and stereo data would then be added.
CIRS	John Spencer via Mike Flasar	CIRS will produce (1) image cubes in latitude/longitude space that can be readily correlated with geographical features (in FY2011) and (2) image cubes in RA/Dec space each with backplanes containing the geometrical data for each pixel.
Huygens	Ralph Lorenz	A single timeline of the data sets relative to each other, and documentation that describes instrument performance issues and idiosyncrasies during the data collection period.
INMS	Hunter Waite	INMS will generate Titan neutral density profiles and Titan ion density profiles which depend directly on the results of the calibration analysis.
MAG	Chris Russell via Michele Dougherty	MAG will produce (1) A set of plots of where the spacecraft is relative to the planet and the moons in coordinate systems and scales that will be useful to those analyzing the data and 2) A set of plots of where the magnetic field line through the spacecr
Cassini Search?	Mark Showalter	The Cassini Mission has requested a proposal to expand RINGS' search capability across the mission.
RPWS	Don Gurnett	RPWS will produce dynamic spectra from RPWS with cyclotron and upper hybrid frequencies overlaid.

# Cassini Metadata Retrieval

- This is being considered for possible funding in FY12.
- Two years ago Sean Hardman interacted with Elmain Martinez to define the requirements for a PDS tool that could extract metadata from the Cassini mission to enhance the PDS registry and search capability, linking users directly to the nodes that serve it.
- Bob Mitchell has asked for a phased plan to implement a significant component of this in FY12.
- This tool would reside in the PDS and serve as a pathfinder for other mission-specific web interfaces and tools that integrate with PDS.
- Currently, Crichton, Hardman & Beebe are interacting with Cassini management
- Beebe has worked with the teams to develop a set of search scenarios and would welcome input from the nodes

# Summary

- Regular ATMOS activities are on schedule
- Work on Data pipelines of developing missions is being urged and moving forward
- Progress has been made in scoping and preparing for PDS3-to-PDS4 transition
- Interactions with the Cassini mission are defining products and efforts to provide better data access for the science community with full cooperation of mission management